



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------------------------------------------------------------|-------------|----------------------|-----------------------------|------------------|
| 10/724,373 | 11/29/2003 | Victor Il'ich Kopp | 1014-26 | 9650 |
| 7590 06/13/2005 | | | | |
| Edward Etkin, Esq. Suite 3C 4804 Bedford Avenue Brooklyn, NY 11235 | | | EXAMINER SEVER, ANDREW T | |
| | | | ART UNIT 2851 | PAPER NUMBER |

DATE MAILED: 06/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/724,373

Applicant(s)

KOPP ET AL.

Examiner

Andrew T. Sever

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2005.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
4a) Of the above claim(s) 1-11 and 22-37 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 12-21 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 29 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of species II (claims 12-21) in the reply filed on 5/27/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Applicant did not indicate whether the election was with or without traverse and accordingly it is being held to be without traverse.

2. Claims 1-11 and 22-37 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 5/27/2005.

Information Disclosure Statement

3. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless

Art Unit: 2851

the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

4. Figures 4 and 5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

Art Unit: 2851

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 12-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokoyama et al. (US 2001/0013924) in view of Kopp et al. (US 2001/0036212) and Kaminsky et al. (US 2004/0076203.)

Yokoyama teaches in figure 1 a projection apparatus for projecting a display image derived from plural component (R, G, B) signals produce by a signal source connected thereto, comprising:

A plurality of light sources (OLEDs: 13R, 13G, and 13B), each light source configured to receive one of the plural component color signals, wherein said light sources are operable to emit light radiation therefrom to form a plurality of color light beams (3), each plural color beam being representative of a particular color component of the display image; and

Combing means (15) for combining said plural color light beams into the display image for projection onto a surface (17).

Yokoyama does not teach that the light sources are chiral lasers or that they are pixilated.

Kopp teaches the use of chiral lasers and in paragraphs 3-14 teaches that prior art light sources such as LEDs (of which an OLED is a variety thereof) have limitations such as high divergence and slow speed among other things which makes them less useful in certain displays (such as holographic displays and as well known, high definition displays). Accordingly Kopp teaches the use of a novel chiral laser light source which has better performance (see Kopp for details of the structure of a chiral laser) and given that the chiral laser of Kopp has better performance than LEDs and other prior art light sources it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the chiral laser light source of Kopp as the light source in the display device of Yokoyama.

Neither Yokoyama nor Kopp teach pixilating the light source. Kaminsky teaches an embodiment in paragraph 44, where OLED lasers are pixilated by modulating the reflectance of the bottom dielectric stack (part 36 in Kopp) to produce pixels, which are separately addressable. Kaminsky teaches that using pixilated lasers in a projection device reduces speckle, allows for the light emitted being phase-locked while allowing the laser to remain in a single mode or at most a few modes. This allows the overall laser to be optically pumped by an inexpensive incoherent LED. Also as is well known in the art, pixilating the laser eliminates the necessity for a light valve, reducing cost considerations. Accordingly since it is known how to pixilated a laser such as Kopp's and since pixilating eliminates the need for light valves while producing a better picture;

Art Unit: 2851

it would have been obvious to one of ordinary skill in the art at the time the invention was made to pixilate the lasers of Yokoyama in view of Kopp as taught by Kaminsky.

With regards to applicant's claim 13:

The chiral laser of Kopp is a CLC film laser (see paragraph 15 for example) and it would be obvious in light of the teachings of Kopp to use such a laser as the laser in Yokoyama in view of Kopp and Kaminsky.

With regards to applicant's claim 14:

Both Yokoyama and Kaminsky teach the use of red, green, and blue light sources/lasers.

With regards to applicant's claim 15:

As taught by Kaminsky the pixels are separately addressable.

With regards to applicant's claims 16 and 17:

Kopp teaches both optical and electronic pumping means (see figures 4 and 2 respectively.)

With regards to applicant's claim 18:

Inherently in electronic pumping chiral lasers a signal source comprises the electronic pumping means (the lasers are only pumped when a signal is present (i.e. when the light source that the lasers comprises is on.)

Art Unit: 2851

With regards to applicant's claim 19:

The combining means of Yokoyama is labeled as a dichroic combiner cube (a dichroic prism).

With regards to applicant's claim 20:

A focusing means is provided by Yokoyama (part 16 which is a projection lens.)

With regards to applicant's claim 21:

The projection surface (17) of Yokoyama is specified to be a transmissive screen.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 6,808,269 to Cobb, teaches a laser based projection system including the use of various light sources interchangeable in column 11 lines 13-22.

US 6,552,754 to Song et al. teaches in figure 9 a three laser based projector.

US 6,612,703 to Lowenthal et al. in figure 3 teaches a projector.

Art Unit: 2851


US 2004/0189952 to Kuratomi teaches in figure 4 a LED/OLED laser based projection system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Sever whose telephone number is 571-272-2128. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AS


JUDY NGUYEN
SUPERVISORY PATENT EXAMINER